

THE TEXAS WATER SOURCE

UPDATING CHAMBERS AND LIBERTY
COUNTY LANDOWNERS ON LAND
MANAGEMENT & WATER ISSUES

April/May 2021

Double Bayou

Double Bayou has two forks, one east and one west, of the small town of “Double Bayou” in Chambers County. The two forks are part of Trinity Bay which is part of Galveston Bay. Overall, Double Bayou drains 61,445 acres.

Off of the East Fork is the Anahuac National Wildlife Refuge. This 37,000 acre refuge has a diverse ecosystem ranging from coastal marshes to thick woodlands to sandy beaches. Wildlife species present in the refuge include migratory waterfowl, alligators, and bobcats.

The West Fork is fed by the Trinity River and Lake Anahuac. Most of the land in Double Bayou is used for ranching or farming.

The town of Double Bayou was settled in 1847 by a rancher named James Jackson. The general store was the social hub of the town. A sugar cane mill, cotton gin, and post office were established in Double Bayou. There was also a port that received about 26,000 tons of cargo in 1981. Access into and out of Double Bayou was mostly by boat. By the 1930s, the population was about 150-300. In 2000, it was around 400.

Today, the Double Bayou Watershed has come into the spotlight (along with other Texas watersheds) for elevated bacteria levels and low dissolved oxygen. Water quality is important because this feeds into larger water bodies. Oyster production and commercial fishing along with recreational activities could suffer if

water quality is not improved.

A watershed protection plan (WPP) has been created and approved for Double Bayou by the Texas State Soil and Water Conservation Board. Through public meetings, workshops, research, and analysis, bacteria load reductions goals were set along with identifying the potential sources of bacteria.



For more information:

WPP: <https://tinyurl.com/3a7mea7c>

<https://agrillifetoday.tamu.edu/2013/05/22/double-bayou-tws-training/>

Who Owns Texas Water?

Water comes from either groundwater or surface water. Surface water is found in ponds, lakes, rivers, streams, and bays. Groundwater filters down from the earth's surface and accumulates underground in aquifers.

In Texas, water rights depend on whether the water is surface water or groundwater. Surface water is publicly owned and governed by the State. Without a permit from the Texas Commission on Environmental Quality (TCEQ), landowners may only use surface water for domestic and livestock purposes. If a landowner wishes to use the surface water for other uses such as irrigation, manufacturing, or power, s/he must obtain a permit.

Diffused surface water is commonly referred to as storm water, drainage water, or surface runoff. Texas law states that diffused surface water is the property of the landowner until it enters a natural watercourse, where it becomes property of the state. This means that a landowner may harvest the rainwater into the soil, or capture and store drain-

age water, as long as the water is captured before it reaches a natural water course.

Unlike surface water, groundwater is the property of the landowner. This allows a landowner the right to capture the water beneath his/her property, and sell, lease, and move the water pumped from his/her property to a neighbor, corporation, or city.

Historically, groundwater has been governed by "the rule of capture," which allows a person, with legal right to the groundwater, the right to pump whatever groundwater is available, regardless of the effects that pumping may have on neighboring water wells. Texas courts have limited the rule of capture in order to prohibit a landowner from:

- Pumping water for the purpose of harming adjoining neighbors, or for wasteful purposes.
- Causing land subsidence (sinking) on adjoining land from negligent pumping; and,
- Drilling a slant well that crosses the adjoining property line.

Organization Spotlight

Trinity River Authority



The Trinity River Authority was created by Texas Legislature in 1955. The Trinity River Authority's mission is "to promote conservation, reclamation, protection and development of the natural resources of the river basin for the benefit of the public." The entire Trinity River Basin is 18,000 square miles.

Within the Trinity River Authority is the Lake Livingston Dam. Lake Livingston is the largest single-purpose reservoir in Texas. It is 83,000 surface acres. It provides water for four counties and the city of Houston. Fishing is also allowed in this lake.

The Trinity River Authority helps to manage six different waste water treatment plants across the

river basin. TRA also cooperates with federal water storage projects.

Fun Facts:

The Trinity River was discovered by Robert Cavalier de La Salle in 1687.

Since 1911, thirty-one lakes have been constructed in the Trinity River Basin.

For more information:

- <https://www.trinityra.org/index.html>

Double Bayou Bacteria

USGS Water Sampling

The United States Geologic Survey (USGS) has conducted water sampling surveys in the Double Bayou watershed. This began in 2015 with the development of the Watershed Protection Plan (WPP). Phase II has started in the WPP and this means water sampling has continued.

There have been four sample periods across the Bayou. There was also a 24 hour sample completed in September 2020. There have been a total of 60 bacteria samples collected across the Bayou plus 4 samples from the waste water treatment facility as of Fall 2020. USGS plans to do a sample during a rain event, which would allow them to get samples during a high flow level. Dissolved oxygen was the focus of the 24hr sample period. The results indicate there is less *enterococci* and *E. coli* bacteria in the East Fork than in the West Fork. The waste water treatment facility results found very low *E. coli* levels. Efforts to track the source of the bacteria have determined the two biggest contributors are cattle and feral hogs. The rural area of this watershed supports this as human waste levels were low.



Bucket used to collect water samples for analysis.

The Double Bayou Watershed is actually the most rural of the five sites around Galveston Bay that were sampled for bacteria levels. Double Bayou had the second highest amount of bacteria from domestic animals/livestock. The most bacteria was identified to have come from wildlife. Feral hogs are the most likely culprit.

As most know, feral hogs are overly abundant in East Texas. Feral hogs wallow in and around water which leads to bacteria deposition. They disturb soil in this process which creates erosion and more water quality problems. Land/farm owners know all too well the damage feral hogs can cause. Since hogs are a nuisance species, the Chambers County Sheriff's Office ran a feral hog eradication program beginning in December 2019. Feral hogs reproduce quickly which makes eradication more challenging. By the fall of 2020, they had removed 402 feral hogs from the Double Bayou area. This will hopefully help to improve water quality as well as public safety.



For more information:

<https://www.doublebayou.org/>

Feral hogs: <https://tinyurl.com/5u8euujk>



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Texas Forest Info

Texas A&M Forest Service has designed some great (and free!) web applications to help you manage your property.

You can access them via www.texasforestinfo.com.

The applications include, "Plan My Land Operation," "Map My Property," "Forestry Herbicide Prescriptions," "My Land Management Connector," among others.

Plan My Land Operation has features to help you identify any sensitive areas of your property, soil types, and elevation. You can also get recommendations for culvert sizes and regeneration method suitability.

Map My Property is a simple tool that allows you to map the boundaries of a tract and export the area into another mapping software or as a map itself. You can also view soils on this app.

Forestry Herbicide Prescriptions gives you recommendations for tank mixes or a single solution based off of desired species, weed species, timing of application, and stand age.

My Land Management Connector is a database of service providers that you can contact for various forestry and woods road needs. If you are a service provider/contractor you can list your services on it for free.

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